DP321

cd-r king™

www.cdrking.com

User's Manual

Dot Matrix Printer

9-PIN

For technical support please visit: www.cdrking.com

For comments or suggestions, please email us at: support@cdrking.com

Important Safety Instructions

1. Read all of these instructions carefully and thoroughly and save them for later reference.
2. Follow all warnings and instructions in the manual as well as marked on the product.
3. If the printer has been used just now, please not touch the print head for overheating.
4. Do not put your fingers under the tractor cover of the left and right tractor when install the tractor paper.
5. Unplug this product from the power outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
6. Do not use this product near water.
7. Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to you or the product.
8. Slots and openings on the cabinet and the back or bottom are provided for air ventilation. To ensure reliable operation of the product and to protect it from overheating, do not block or cover these openings. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should never be placed near or over a radiator or heater. This product should not be placed in a built-in installation or kiosk stand unless proper ventilation is provided.
9. This product should never be placed near or over a radiator or heat origin, and should avoid of direct sunshine.
10. Do not locate this product where the cord will be walked on. When the cord or the plug is mangled, please stop using and get a new one replaced. Make sure the old one is far away from the printer, so it can avoid someone who does not know the inside story getting damage.
11. Do not use in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage or fire.
12. Never push objects of any kind into this product though cabinet slots as they may touch dangerous voltage dots or short out parts.
13. Don’t remove the printer’s out-cover and repair the printer. When needed, call or take it to the professional.
14. To ensure safety, please unplug this product prior to leaving it unused for an extended period. The wall outlet you plan to connect to should be nearby and unobstructed.
15. Unplug this product from the power outlet and leave servicing to qualified service personnel under the following conditions:

    A. When the power cord or plug is damaged or frayed.

    B. If liquid has been spilled into the product.

    C. If the product has been exposed to rain or water.

    D. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since importer adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

    E. If the product has been dropped or the cabinet has been damaged.

    F. If the product exhibits a distinct change in performance, indicating a need for service.

Note: The contents of this manual may be changed without prior notice.

*** All parts of the printer can be recycled. When it is abandoned, we can call it back freely. Please contact us when you abandon it.**

Warnings, Cautions, and Notes

Pay attention to the following promises when using this manual:

Warnings:

Warnings must be followed carefully to avoid bodily injury.

Cautions:

Cautions must be observed to avoid damage to your equipment.

Notes:

Notes contain important information and useful tips on the operation of your printer.

The Guide

First thanks for buying the CD-R King printer. The printer is 9-pin 80-column Dot Matrix Printer, can satisfy multi-function print requests. It can be widely used in tax, mail, telecom, police, hospital, insurance, finance, stock, customhouse, cabaret, aviation and transport etc.

The printer feature introduce as follow:

- **Install print paper easily**

  The install design make you operate easily, install paper rapidly and save your time.

- **Tear off function**

  This causes tractor paper to be automatically fed to the tear-off position at the edge of the window cover, for easy tear-off at the perforations after printing. This zero tear-off capability helps eliminate paper wastage.

- **Facility switch between cut-sheet and tractor paper**

  Feed the tractor paper back to the installing position through **LOAD/EJECT** key on the control panel, pull the paper select lever to the cut-sheet position. Insert the cut-sheet from front to print. If you want to use tractor paper again, pull the paper select lever back to the tractor paper position after cut-sheet printing. Then press **LOAD/EJECT** key, tractor paper may be fed to the printer again.

- **Eject function**

  The function allow the user eject the cut-sheet or tractor paper through the facility button on the control panel.

- **Select the data transfer interface function automatically**

  The printer configures parallel interface, USB interface or serial interface (According to specific interface standards). Connect the printer to the computer with the correct cables. The printer will switch the correct interface according to the type of data automatically.

- **Emulation**

  The printer supports the Epson ESC/P2 and IBM2391 emulations as standard.

- **International character set and multi-kinds code pages**

  Inner international character set (U.S.A, FRANCE, GERMANY, U.K., DENMARK1, SWEDEN, ITALY, SPAIN 1, JAPAN, NORWAY, DENMARK2, SPAIN 2, LATIN AM, KOREA, LEGAL, HOLAND, TURKEY) and multi-kinds code pages (U.S.A, MULTI, PORTUGAL, CANADA, NORWAY, ICELAND, BRASCII, ABICOMP, ROMAN 8, IS0 LTN1, PC858, ISO LTN9, ARAB NLS, WIN 1256, TURKEY, WIN LAT1, CYRILLIC, RUSSIAN, THAI, VIETNAM).

- **Break pin compensation function**

  User can set the printer to print using the pin which is in good condition to compensate the break pin.

- **Pin switch in turn function**

  User can set pins to switch while printing form transverse line in order to improve print head life.

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Chapter 1 Preparation

1.1 Unpacking & Checking

Check each item against the followi ng packing list, if any of these items is missing, please contact your dealer.

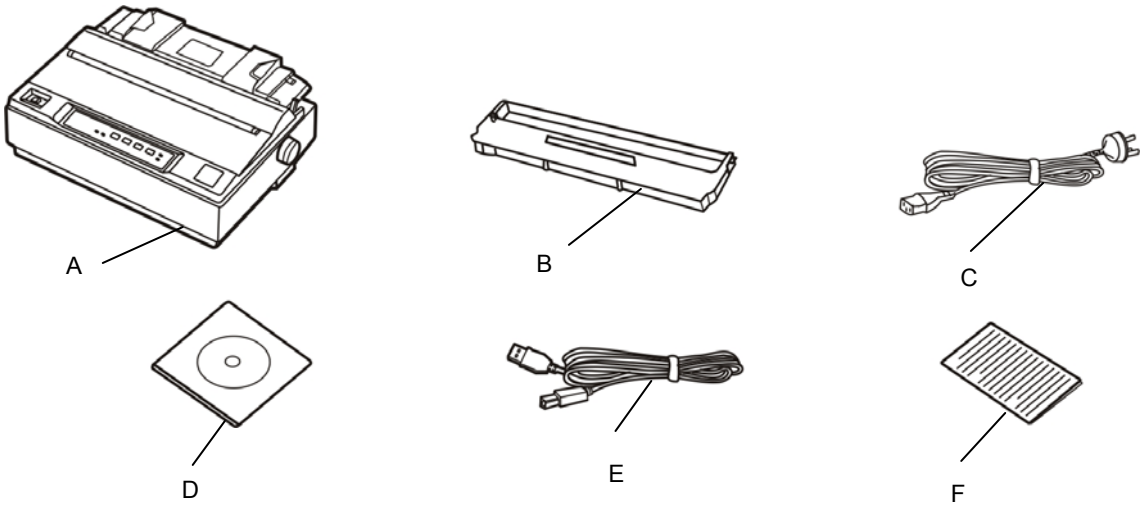


Figure 1-1 Packing list

A Printer
B Ribbon cartridge (JMR108)
C Power cord
D Driver CD (Including *user's manual* and driver)
E Interface cable
F Facility user's guide

Note: The fittings please refer the packing list. The packing style above is subject to change without notice.

1.2 Unpacking the Protective Materials

1. Open the packing box, lift up the printer, open the upper cover of the printer, remove the packing materials shown in figure 1-2.
2. Save all the original packing materials, so that it can be used when transport the printer.

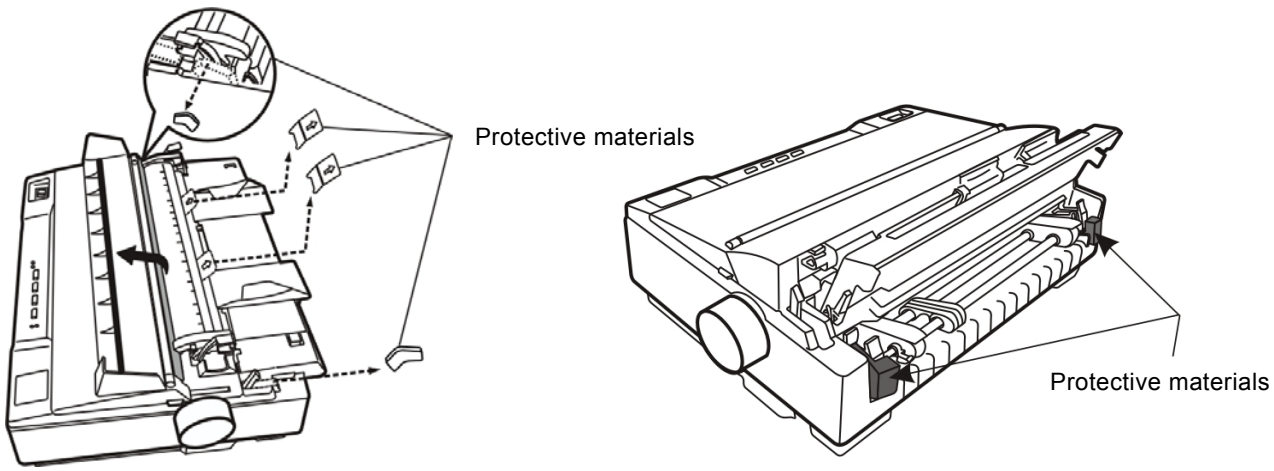


Figure 1-2 Unpacking protective materials

1.3 Main Parts of the Printer

Figure1-3, Figure1-4 and Figure 1-5 shown are main parts of DP321.

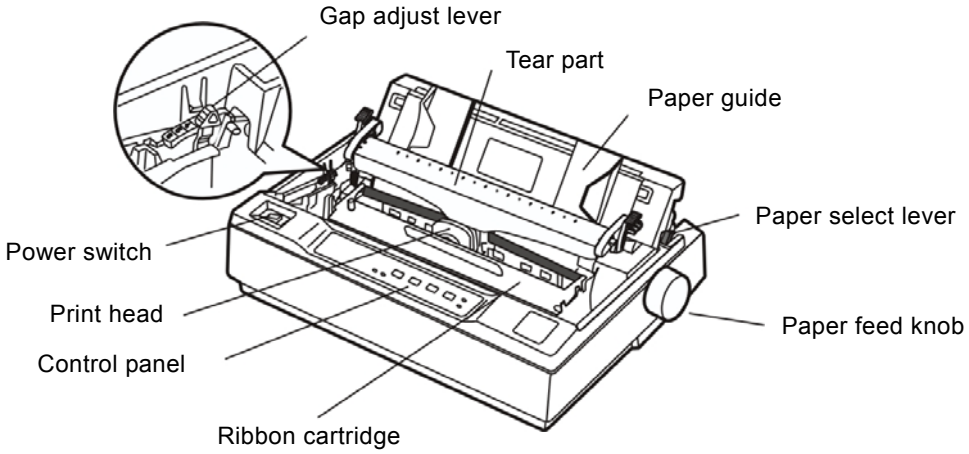


Figure 1-3 Main parts of printer (front view)

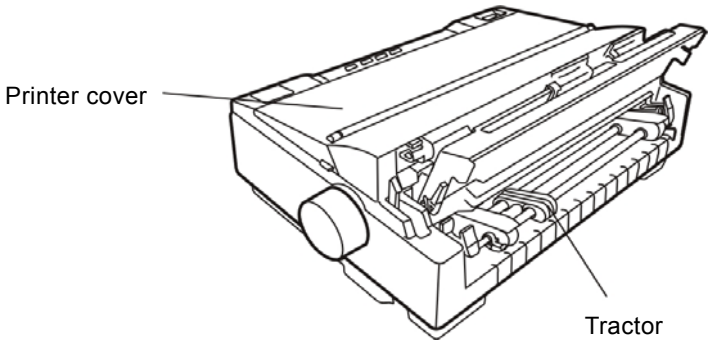


Figure 1-4 Main parts of printer (side view)

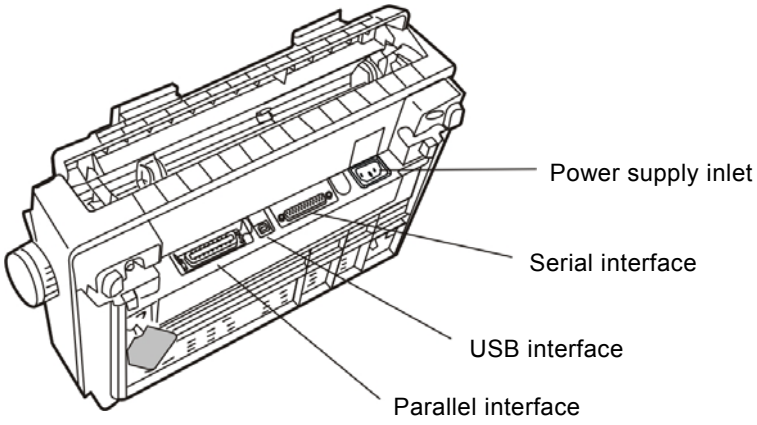


Figure 1-5 Main parts of printer (back view)

★ According to specific interface standards

1.4 Choosing a Place for the Printer

When selecting a place to set up your printer, choose a convenient location that provides the following:

1. A flat, stable surface.

2. Adequate room around the printer to allow easy operation and maintenance. Make sure it's close enough to the computer for the printer cable to reach, and be sure you can easily unplug the power cord.
3. Moderate environmental conditions. Select a cool, dry area and protect your printer from direct sunlight, excessive heat, moisture, or dust.
4. Appropriate power source. Make sure you use a grounded outlet; do not use an adapter plug. Avoid electrical outlets controlled by timers or wall switches; an interruption in power can wipe out the information in your computer or printer memory

If you place the printer on a stand, follow these guidelines:

1. Use a stand that supports at least 9 kg (19 lb).
2. Never use a stand that tilts the printer. Always keep it level.
3. Provide enough clearance below the stand and between the legs of the stand so your tractor paper flows smoothly.
4. Place cables so they do not interfere with paper feeding; secure them to a leg of the stand if possible.

1.5 Assembling the Printer

Follow the steps in this section to get your printer up and running.

1.5.1 Installing the Paper Feed Knob

1. Insert the paper feed knob into the hole in the printer's right side. As shown below.

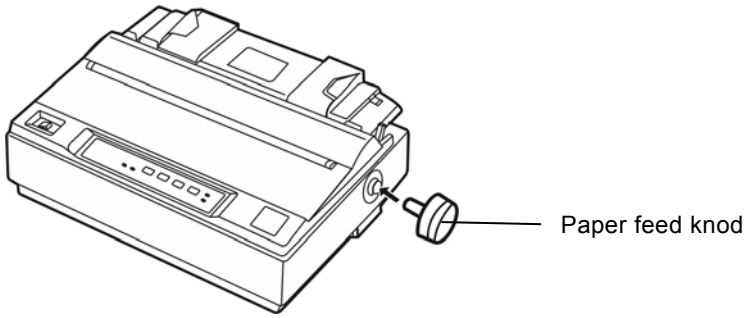


Figure 1-6 Install the paper feed knob

Note: The D shape of knob should be corresponding to the D shape shaft inside the printer case.

2. Push firmly on the knob until it fits against the printer case.

1.5.2 Installing the Ribbon Cartridge

1. Before installing the ribbon cartridge, make sure the printer is turned off.
2. Dismantle the printer cover to the backward position, and then pull up to remove it.

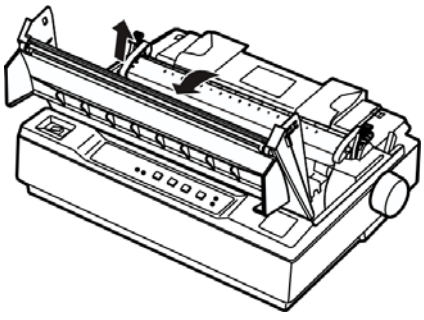


Figure 1-7 Dismantle the printer cover

3. Dismantle the tear part. Impact the locked piece both sides of tear part, then pull up the tear part shown as follows.

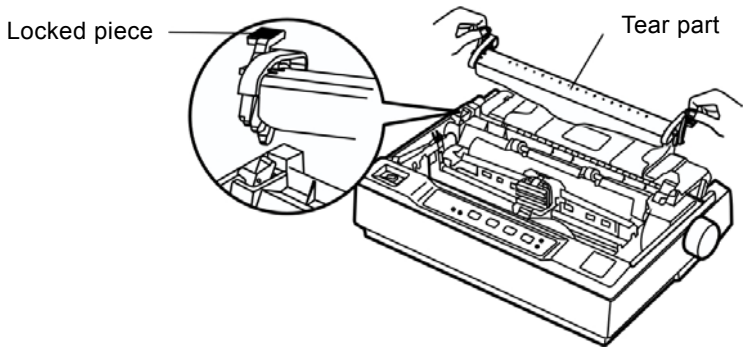


Figure 1-8 Dismantle the tear part

4. Pull the gap adjust lever to the highest position.

5. Slide the printhead to the middle of the printer.

Warning: Never move the printhead while the printer is turned on; this can damage the printer. Also, if you have just used the printer, let the print head cool for a few minutes before you touch it.

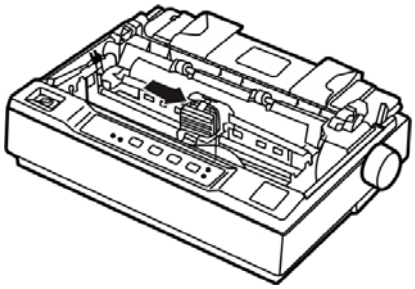


Figure 1-9 Slide the print head to the middle of the printer

6. Take out the ribbon, take the surface with a knob facing yourselft, and turn the ribbon-tighten knob in the direction of the arrow to tighten the ribbon, so it is easier to install.

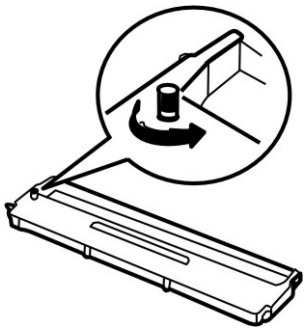


Figure 1-10 Tighten the ribbon

7. Insert the ribbon cartridge into the printer as the following figure shown; then press both sides of the cartridge down firmly to fit the plastic hooks into the printer slots.

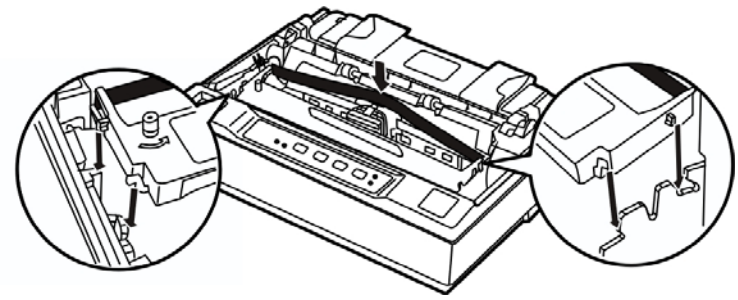


Figure 1-11 Install ribbon cartridge

8. Use hands or other auxiliaries, to guide the ribbon between the print head and metal patch. Turn the ribbon-tightening knob to feed the ribbon into place, it should not be twisted or creased.

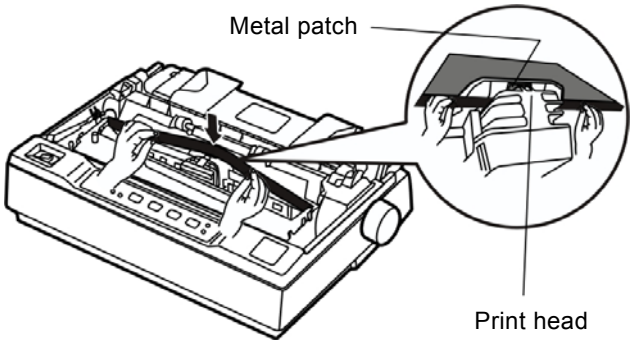


Figure 1-12 Guide the ribbon between the print head and metal patch

9. Slide the print head from side to side several times to make sure it moves smoothly.

10. After installing the ribbon, pull the gap adjust lever to the original position, then reinstall the tear part and close the printer cover.

NOTE: 1. When your printing becomes faint, you need to replace the ribbon cartridge. Otherwise, the print quality will be affected and the printhead may be damaged.

2. To remove the old ribbon cartridge, first make sure the power is turned off, move the printhead to the center of the printer. Then grasp the ribbon cartridge handle on either side and lift it out of the printer. Install a new one follow the above steps.

3. Please use the original JMR108 ribbon cartridge, our company will not guarantee to keep the printer in good repair, when it is damaged by unauthorized ribbon cartridge.

1.6 Installing the Tractor

There are two positions for the tractor to be installed, one is push installation position (back of printer), and the other is pull installation position (top of printer). The tractor that installed in the back of printer is called push tractor, and the one installed in the top of printer is called pull tractor.

Generally, you can use push tractor when using standard tractor paper. Only in this way, can the printer use tear function normally. If the print position requires high precision, such as printing on the paper with forms, you are suggested use pull tractor.

1.6.1 Installing the Push Tractor

Take the installing slots on both sides of tractor aim at the installation pin which is in the back of printer, press forward till it locked into the position. (Shown as the following figure)

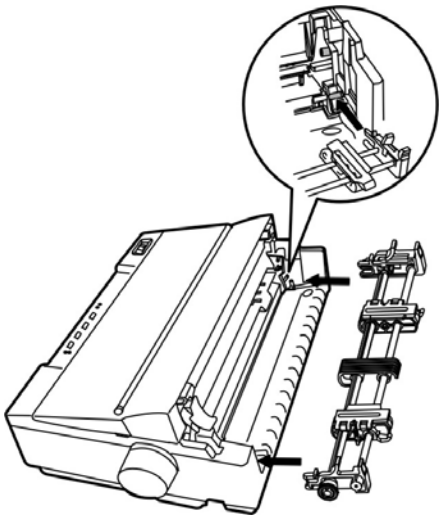


Figure 1-13 Install the push tractor

1.6.2 Installing the Pull Tractor

If the tractor has been installed in the push position (back of printer), take down the tractor, unpack the tear cutter, and install the tractor in the pull position. The concrecte steps are as follows.

1. Make sure the printer is turned off, take down the paper guide, and dial the paper-select lever to the tractor paper position according to follow figure.

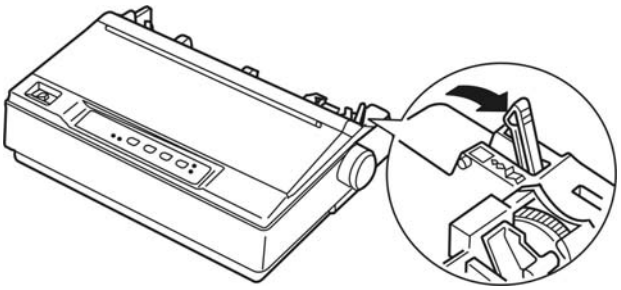


Figure 1-14 Set paper-select lever

2. Take down the push tractor, please follow these steps: Compact the locked piece of the tractor (shown as the following figure), and pull out the tractor from the printer, take down the printer cover.

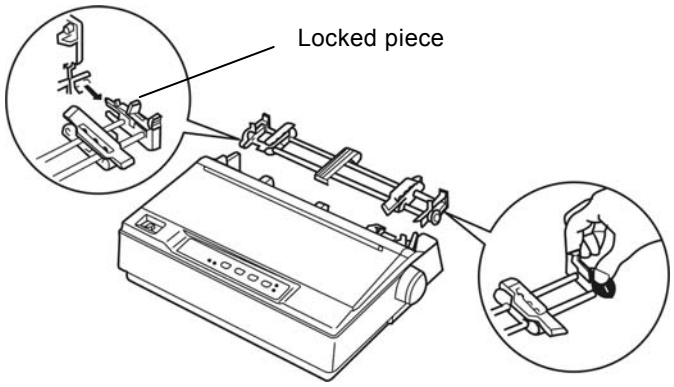


Figure 1-15 Take down the push tractor

3. Compact the locked piece of the tear part (shown as the following figure), lift it upwards.

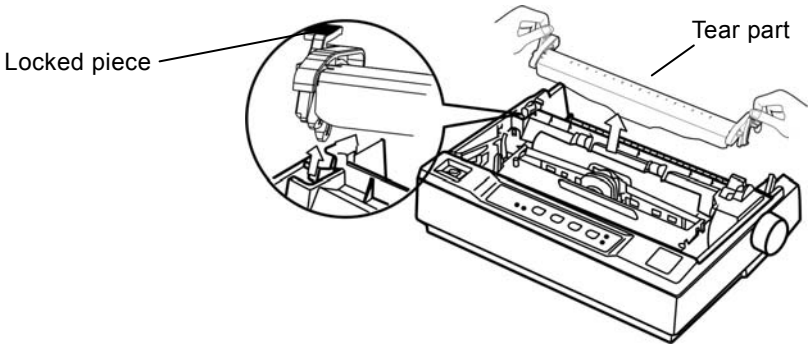


Figure 1-16 Take down the tear part

4. Take up the tractor aiming at the installation slot on the top of printer (the slot for the tear part to be installed), press the tractor until it locked into the slot according to the following figure.

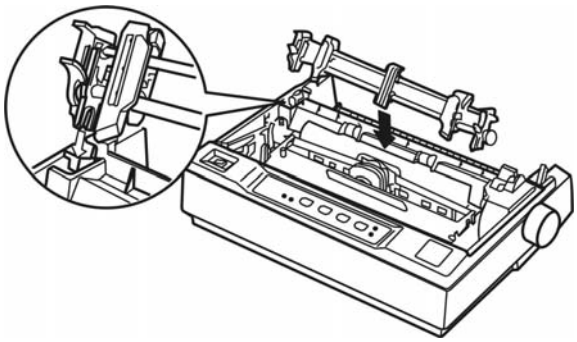


Figure 1-17 Install the pull tractor

1.7 Connect the Power Cord

1. Make sure the power switch on the printer is turned off. It is off when the O side of the switch is pressed down.

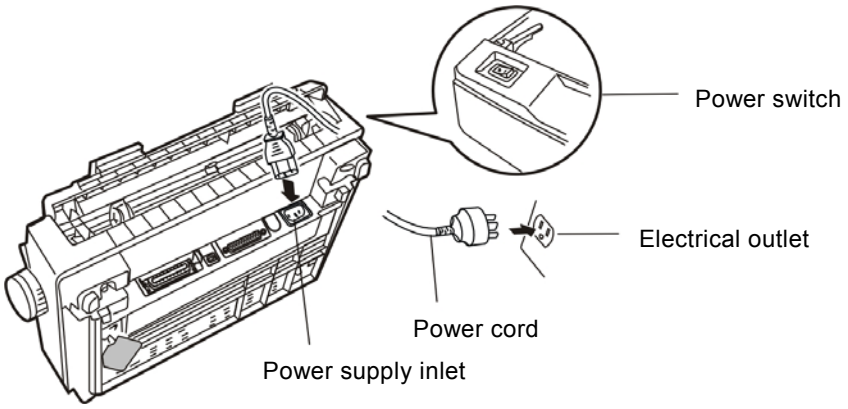


Figure 1-18 Turn off the printer

2. Check the label on the bottom of the printer to make sure the voltage required by the printer matches that of your electrical outlet.
3. If the power cord is attached to the printer, connect it to the power supply inlet on the printer.
4. Plug the power cord into a properly grounded electrical outlet.

Note: 1. If the rated voltage and your outlet voltage do not match, contact your dealer for assistance. Do not plug in the power cord.

2. Adopt the electrical outlet connecting the ground properly.

1.8 Running the Self-test

The built-in self-test function demonstrates that the printer is working properly. You can run the test with either tractor paper or cut-sheets; this section describes the easier way of ASCII self-test, with cut-sheets.

Note: You should use paper at least 210 mm (8.3 inches) wide to run the self-test; otherwise, the print head prints directly on the platen.

1. Make sure the printer is turned off and the paper-select lever is pushed back to the cut-sheet position. Raise the paper guide upright.

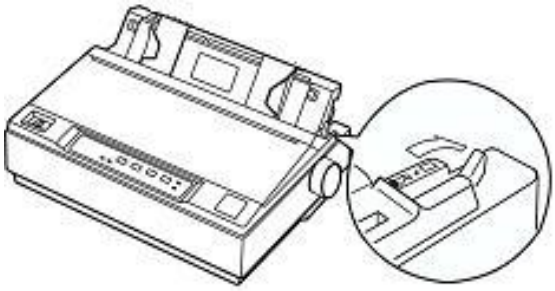


Figure 1-19 Set paper select lever

2. While holding down the **TEAR** button, turn on the printer. Loosen the button after the **POWER** indicator blinks and the **ONLINE** indicator is off, which indicates the printer is out of paper.

Figure 1-20 Start up self test

3. Slide the left edge guide until it locked in place at the triangular guide mark. Next, adjust the right edge guide to match the width of your paper.

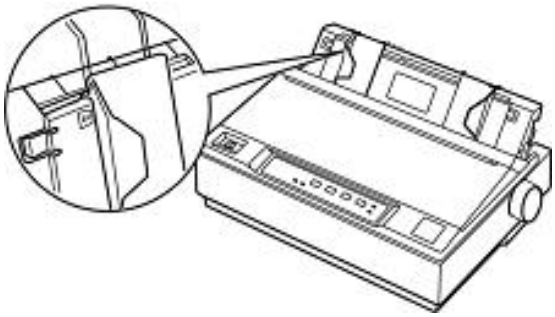


Figure 1-21 Adjust the right edge guide

4. Slide a sheet of paper down firmly between the edge guides until it meets resistance. The printer loads the sheet automatically and begins printing when pressing **ONLINE** button.

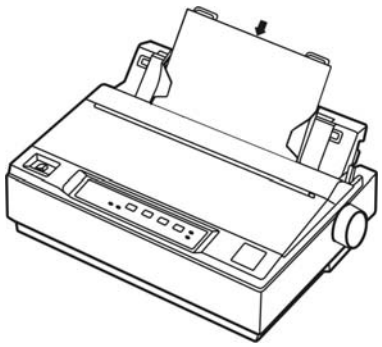


Figure 1-22 Install cut-sheets

Caution: Always close the printer cover while the printer is printing. The printer cover helps the paper feed properly.

5. To stop printing temporarily, press the **ONLINE** button.

6. To end the self test, make sure the printer is not printing. Press **LF/FF** or **LOAD/EJECT** button to eject the sheet; then turn off the printer.

A S C I I Self-test mode

DP321 VX.X 20XX/XX/XX

!"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`ab
!"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abc
"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abc

Figure 1-23 ASCII Self-test

NOTE: If the self test did not print satisfactorily, see Chapter 4. If it prints correctly, go on to the next section.

1.9 Connecting the Printer to Your Computer

The printer configures parallel interface, USB interface or serial interface (According to specific interface standards). Connect the printer to the computer with the correct cables. Before you begin, place the printer upright, as shown below. (This makes it easier to connect the cable.)

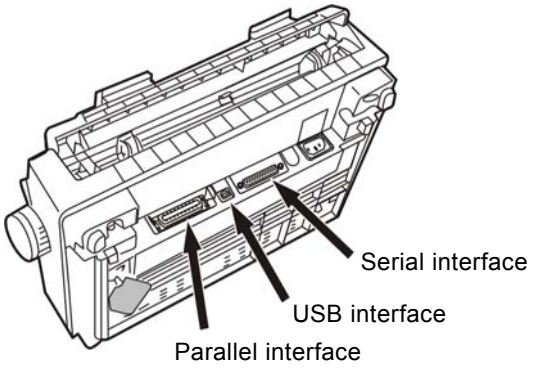


Figure 1-24 Lay the back of printer upwards

Note: Before connecting the parallel interface or the serial interface, please make sure the power of the printer is shut down. Only after tighten the cable, could turn on the printer, or it will damage the printer.

1.9.1 Connecting to the Parallel Interface

1. Turn off both the computer and the printer. Plug the parallel cable connector securely into the printer's parallel interface. Squeeze the wire clips together until they lock in place on either side of the connector.

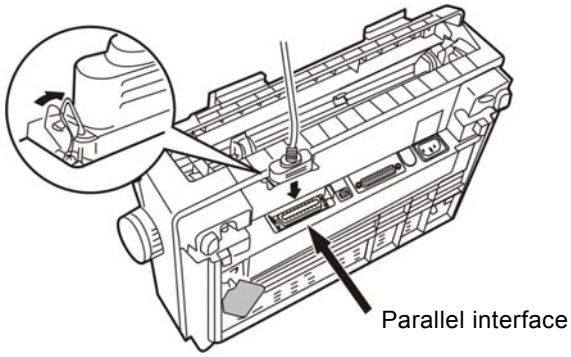


Figure 1-25 Connect to the parallel interface

2. Plug the other end of the cable into the computer's parallel interface.

1.9.2 Connecting to the USB Interface

1. Plug the A end of the USB cable (flat shape) into the computer's USB interface.
2. Plug the B end of the USB cable (square shape) into the printer's USB interface.

Note: Don't impact the plug after connecting to the USB cable.

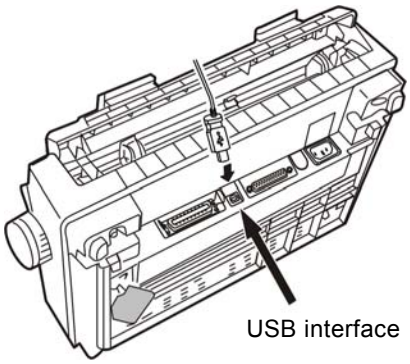


Figure 1-26 Connect to the USB cable

1.9.3 Connecting to the Serial Interface

1. Turn off both the computer and the printer. Plug the serial cable connector securely into the printer's serial interface. Tighten the screws on either side of the connector. (As shown in figure1-27)

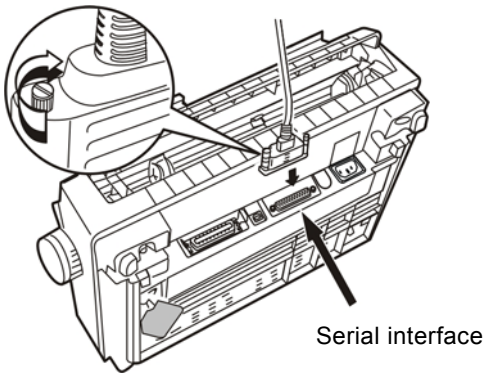


Figure 1-27 Connect to serial interface

2. Plug the other end of the cable into the computer's serial interface; then tighten the screws on either side of the connector.

1.10 Installing Driver

Please use the cable to connect the computer with the printer, then turn on the computer and the printer, put the driver CD into the CD-ROM. Install driver by the following way:

Auto-install way

Double click the file "Setup.exe" in the driver disc, install driver by the following direction.

Note: Auto-install way just work in operating system of Windows2000 or above.

Hand-operated install way

Note: The hand-operated install ways of serial interface and parallel interface are the same.

The installing steps for Windows 2000/XP/Vista are as follows

1. Click "Start" → "Settings" → "Select Printers".
2. Click "Add Printer", then it will show a window of "Add Printer Wizard", click "Next", then please read the select direct carefully, such as, select "Local printer" in the "Local or Network Printer" window, then click "next".
3. Come out a window of "Select the Printer Port", select a usable port. Such as, select "LPT1: printer port", click "Next".
4. Come out a window of "Manufacturers/Printers", click "Have Disk...".
5. Come out a window of "Install From Disk". Please according to the operating system environment, you should select the path as follow: CD-ROM-"Driver"-"WIN 2000 (XP-Vista-Win7)", that you can find a file named: DP321.inf, click "Open", then click "OK", click "Next".
6. Follow the direct click "Next" gradually till the installation is finished.

The installing steps for Windows 7 are as follows:

1. Click "Start" → "Devices and Printers".
2. Click "Add a printer", then it will show a window of "Add Printer", click "Add a local printer", and then click "Next".
3. Come out a window of "Choose a printer port", select "Use an existing port", Such as, select "LPT1: Printer Port", click "Next".
4. Come out a window of "Manufacturers/Printers", click "Have Disk...".
5. Come out a window of "Install From Disk". Please according to the operating system environment, such as Windows 7 operating system you should select the path as follow: CD-ROM-"Driver"-"WIN2000 (XP-Vista-Win7)", where you can find a file named: DP321.inf, click "Open", then click "OK" to return to the window of "Manufacturers/Printers", click "Next".
6. Follow the direct click "Next" gradually till the installation is finished.

The USB interface installing steps for Windows 2000/XP/Vista/Win7 are as follows:

The following steps are used Windows XP as example. There are slight differences among different operating systems.

1. Connect an USB cable and turn on the printer.
2. After the computer find out new hardware and finish searching, come out a window of "Add New Hardware Wizard", click "Next".

3. Come out a window of “Add New Hardware Wizard”-“Windows operation”, choose “Not Search, I want to Choose the Setup Driver (D)”, click “Next”.
4. Come out a window of "Manufacturers/Printers", click "Have Disk...".
5. Come out a window of “Install From Disk”. Please according to the operating system environment, you should select the path as follow: CD-ROM-“Driver”-“WIN2000 (XP-Vista-Win7)”, where you can find a file named: DP321.inf, click “Open”, then click “OK” to return to the window of “Manufacturers/Printers”, click “Next”.
6. Follow the direct click “Next” gradually till the installation is finished.

The installing steps for Windows 98 are as follows:

（1）The installing steps with a parallel cable or a serial cable:

1. Click “Start” → “Settings” → “Printers”.
2. Click “Add Printer”, then it will show a window of “Add Printer Wizard”, click “Next”, then please read the select direct carefully, such as, select “Local printer” in the “Local or Network Printer” window, then click “Next”.
3. Come out a window of “Click the manufacturer and model of your printer”, click “Have Disk...”, please click “Browse”, select the path as follow: CD-ROM-“Driver”-“WIN98 (WINME)”, where you can find a file named: DP321.inf, click “Open”, then click “OK”.
4. Come out a window of “Install From Disk”, click “OK”, return to a window of “Add Printer”, then click “Next”.
5. Come out a window of “Printer port”, select “Available ports”, such as, select “LPT1: Printer Port”, click “Next”, and then show the printer’s name. If the system is not installed by other printer driver process, the printer is treated as default printer by the application process of Window98 environment, click “Next”. Otherwise according to prompt, choose the printer is default: “Yes”, click “Next”, choose “Yes-(recommended)”, click “Finish”. Come out a window of “Printer test page completed”, click “Yes”.
6. The printer driver process is installed successfully.

（2）The installing steps with an USB cable:

Note: 1. As the system of Windows 98/ME doesn’t have integrated USB driver control, please install USB driver before using USB interface printing. Then install USB printer driver.

2. If it has installed the USB driver, please install the USB printer driver directly as the following steps.

USB driver installing steps:

1. Connect an USB cable and turn on the printer.
2. After the computer find out new hardware and finish searching, come out a window of “Add New Hardware Wizard”, click “Next”.
3. Come out a window of “Add New Hardware Wizard”-“Windows operation”, choose “Search the best driver for the device (recommended)”, click “Next”.
4. Come out a window of “Search for new drivers”, check “Specify a location”, click “Browse”, select the path as follows: CD-ROM-“Driver”-“【WIN98 (WINME) \ USBdriver】”, then click “OK”.
5. Return to a window of “Search for new drivers”, click “Next”; Come out a window of “Windows driver file search for the device”, click “Next”.
6. After the system finishing installing the file automatically, come out a window of “USB print supported”, click “Finish”.
7. The printer USB driver process is installed successfully.

USB printer driver installing steps:

1. Click “Start” → “Settings” → “Printers”.
2. Click “Add Printer”, then it will show a window of “Add Printer Wizard”, click “Next”.
3. Come out a window of “Click the manufacturer and model of your printer”, click “Have Disk...”, please click “Browse”, select the path as follow: CD-ROM-“Driver”-“WIN98 (WINME)”, where you can find a file named: DP321.inf “Open”, and then click “OK”.
4. Come out a window of “Install From Disk”, click “OK”, return to a window of “Add Printer”, then click “Next”.
5. Come out a window of “Printer port”, select “Available ports”, select “JMUSB”, click “Next”, and then show the printer’s name. If the system is not installed by other printer driver process，the printer is treated as default printer by the application process of Window98 environment, click “Next”. Otherwise according to prompt, choose the printer is default: “Yes”, click “Next”, choose “Yes-(recommended)”, click “Finish”. Come out a window of “Printer test page completed”, click “Yes”.
6. The printer driver process is installed successfully.

Chapter 2 Control Panel Operations

You can use the four keys on the control panel to operate your printer.

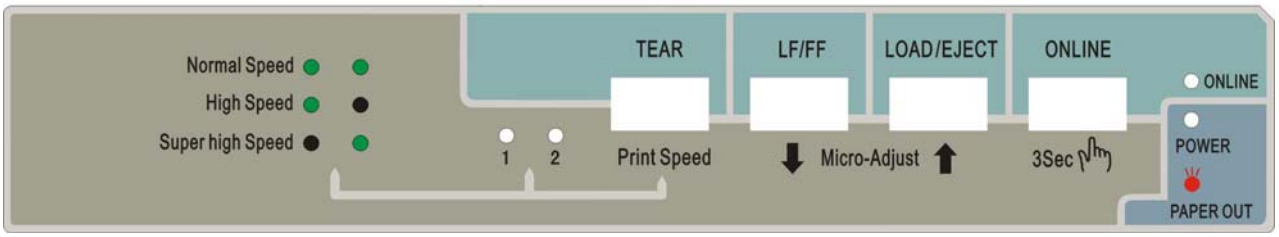


Figure 2-1 Control pannel

2.1 LED Description

LED	OFF	ON	BLINK
ONLINE (Green)	OFFLINE	ONLINE	Micro-Adjust
POWER (Red)	TURN OFF	TURN ON	PAPER OUT or ERROR
LED 1, 2	Indicate the current printing speed		

2.2 Basic Control Panel Operations

2.2.1 In the Tractor Paper Mode

TEAR

1. In the offline mode, if the paper is at the print position, press **TEAR** key once and the printer feeds paper to the tear position.
2. In the offline mode, if the paper is at the tear position, press **TEAR** key once and the printer ejects paper to the next page or the printing home position of the current page.

LF/FF

In the offline mode, if the paper is at the print position, press the **LF/FF** button once (less than 0.5 second), the printer will feed the paper one line base on line spacing current setting. Alternatively, hold the **LF/FF** button down, the printer will continuously feed the paper one page.

LOAD/EJECT

1. When the paper is at the ready position, press **LOAD/EJECT** once, the paper will be fed into the printing home position automatically.
2. When the paper is at print position, press **LOAD/EJECT** button once in offline mode, if the ejectable length of the paper is longer than the length of one sheet, the printer will eject the paper one page. If the ejectable length of the paper is shorter than the length of one sheet, the printer will eject the paper to ready position.
3. When the paper is at the tear position, press **LOAD/EJECT** once, the printer will eject the cut-sheet paper.

ONLINE

1. If the printer has loaded paper in the offline mode, press the key to enter **ONLINE** mode, the **ONLINE** indicator is on and the printer enters into the print mode.
   Press this key in the online mode, the printer is offline, **ONLINE** indicator is off and the printer can not print.

2. If the paper is at the tear position in the offline mode, press **ONLINE** button, the printer will go back to the printing home position of the current page or next page.

2.2.2 In the Cut-Sheet Mode

LF/FF

If the paper is at the print position in the offline mode, press the **LF/FF** button once (less than 0.5 second), the printer will feed the paper one line base on line spacing current setting. Alternatively, hold the **LF/FF** button down, the printer will eject the paper until the cut-sheet is entirely ejected.

LOAD/EJECT

If the paper is at the print position in the offline mode, press the **LOAD/EJECT** button, the paper will be entirely ejected from the printer.

ONLINE

If the printer has loaded paper in the offline mode, press the key to enter **ONLINE** mode, the **ONLINE** indicator is on and the printer enters into the print mode.
Press this key in the online mode, the printer is offline, **ONLINE** indicator is off and the printer can not print.

2.2.3 Print Speed

1. **Print speed** sets print speed. In the offline mode, long holding **ONLINE** for three seconds until "online" indicator blinks, and printer beeps once.
2. At the same time，holding **print speed** can choose speed indicated on control panel. And the two indicators "on" (●) and "off" (●) show the chosen print speed.

Print speed	Indicator 1	Indicator 2
Normal	●	●
High speed	●	●
Super high speed	●	●

3. **ONLINE** for saving and exit the setting state.

2.2.4 Micro-Adjust

1. After turning on the printer, install tractor paper properly using push tractor and feed paper to the printing home position (or tear off position).
2. Hold the **ONLINE** button 3 seconds till the **ONLINE** indicator blinks with a beep in the offline mode.
3. Press 〖↑〗or 〖↓〗 button, with micro-feeding paper upwards or micro-ejecting paper downwards.
4. Press the **ONLINE** button again to save the setting and quit the alternate mode after finishing adjusting. Before adjusting again, the printing home position or the tear position will be effective all the time. After the tear position is adjusted, press **ONLINE** button and you can send commands to print. Only after the printing home position is adjusted, the printer ejects all the paper and feeds paper again, does it print.

The ways of printing home position adjusted between cut-sheet and tractor paper are the same.

Note: The adjusted range of printing home position is from -18/60 inch to +60/60 inch (base on default position set by the factory).

The adjusted range of tear position is from -15/60 inch to +15/60 inch (base on default position set by the factory).

2.2.5 Feed Paper to the Tear Position

1. Turn on the printer, hold the **ONLINE** button 3 seconds till the **ONLINE** indicator blinks with a beep in the offline mode.
2. Hold the **TEAR** button 3 seconds that you can switch the function of feeding paper to the tear position automatically **ON** or **OFF**.

2.2.6 Other Functions of the Panel

Turn on the printer while holding some buttons, and then the printer will enter the special mode.

Key	Function
ONLINE + POWER	Change factory setting, on online mode press **LOAD/EJECT** to access to setting mode.
LOAD/EJECT + POWER	Chinese self-test mode
LF/FF+ POWER	Print pin test for quality mode
TEAR + POWER	English self-test mode
TEAR+LOAD/EJECT+ POWER	Hex dump print mode

2.3 Paper Select Lever

Set paper select lever toward the cut-sheet or tractor paper position to select cut-sheet mode or tractor paper mode.

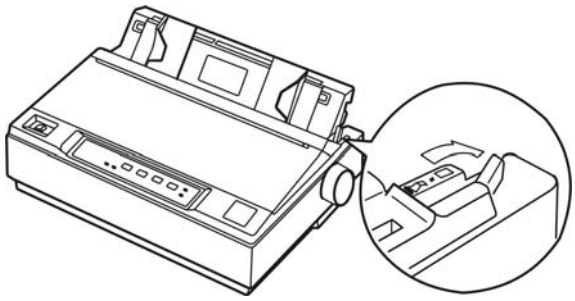


Figure 2-2 Paper-select lever

2.4 Paper Feed Knob

The paper feed knob is used to feed paper or eject paper manually.

2.5 Adjusting the Gap Adjust Lever

The gap adjust lever lets you specify the correct setting for your printing material. It is factory-set for standard office paper. Here's how to change the setting for special papers:

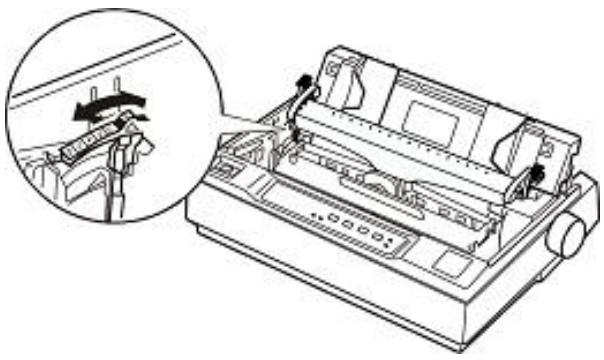


Figure 2-3 Gap adjust lever

Use the table below to select the appropriate paper thickness.

Copies (including original)		**Lever position**
(Reserved)		-1
Standard paper (cut-sheets or tractor papers)		0
Multi-part forms	2	1
	3	2
	4	3
Envelopes	20-pound	4
	24-pound	5
(Reserved)		6

Chapter 3 How to Use the Printer

Here are the steps of using printer:

1. Assemble the printer as the chapter 1, connect the printer to your computer and install the driver correctly.
2. Load the correct type of paper.
3. Set the printer if necessary.
4. Send the print command to the printer to print.

3.1 Installing Print Paper

In addition to printing on cut-sheets and tractor papers, your printer can also print on a wide variety of paper types, including multi-part forms, labels, and envelopes.

Caution: When printing on multi-part forms, thicker-than-normal paper, labels, or envelopes, make sure your software program settings keep the printing entirely within the printable area. Printing past the edge of these papers can damage the print head.

Please print within the printable area while printing. For information on the printable area, see the Appendix A for instructions.

3.1.1 Printing on Cut-Sheets

1. Make sure the printer is powered off, and open the cover of the printer, select the correct GAP of the printer thought the gap adjust lever refer to the Gap Adjust Lever.

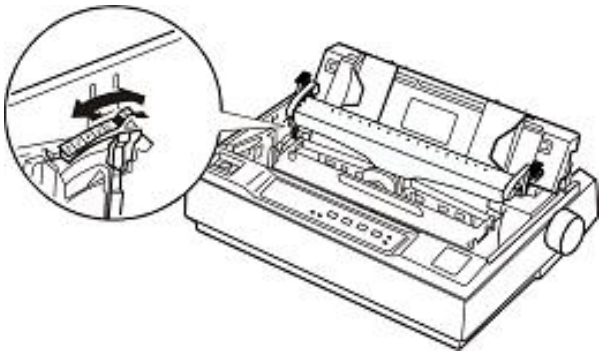


Figure 3-1 Adjust gap adjust lever

2. Close the cover, and set paper select lever toward the cut-sheet position.

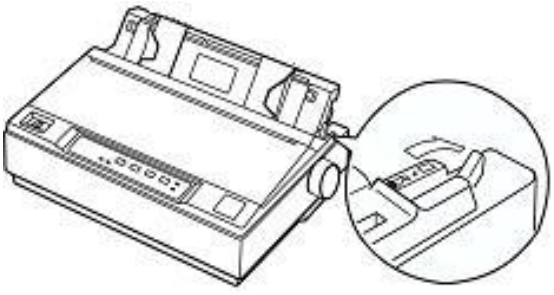


Figure 3-2 Adjust paper-select lever

3. Raise the paper guide upright, and turn on the printer.

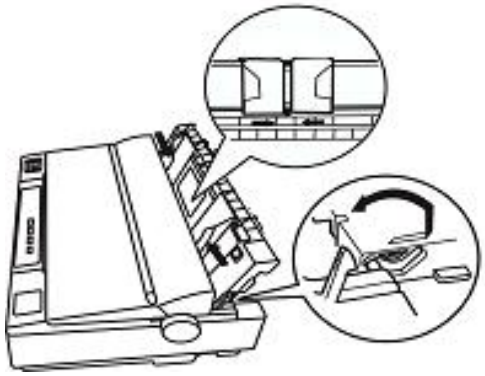


Figure 3-3 Raise the paper guide upright

4. Slide the left edge guide until it locks in place at the triangular guide mark. Next, adjust the right edge guide to match the width of your paper. As shown below.

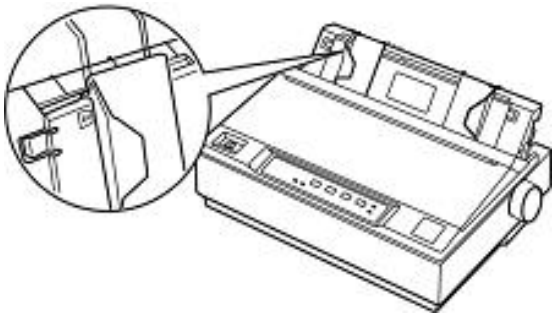


Figure 3-4 Adjust the paper guide

5. Slide a sheet of paper down firmly between the edge guides until it meets resistance. The printer loads the sheet and begins printing automatically. As shown below.

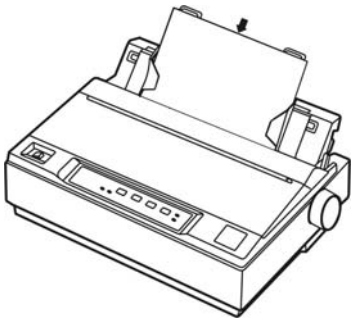


Figure 3-5 Insert a cut-sheet

6. If necessory, set the top-of-form position as shown in Micro adjust.

Note: Don't feed the paper with paper feed knob, or it will influence the consistency of paper-in position.

3.1.2 Printing on Tractor Papers

If you use the tractor paper, you must decide which tractor to be installed. Then you install the tractor in the corresponding way.

For easy to switch between printing on cut-sheets and tractor paper, or easy to tear off tractor paper sheet-by-sheet, you should use the tractor in push position.The printer comes with the tractor installed in this position at the factory settings.

If you want to print on labels, you should use the tractor as a pull tractor.

You can use a push tractor and a pull tractor (optional) at the same time to strengthen the function of dealing with the tractor papers, which is fit for the printing requiring high precision in the print

position, such as continuous forms with printed tables, multiple sheets and labels.
Here's how to load tractor paper:

Printing in the push tractor position

1. Make sure the printer is turned off. Remove the paper guide and place the paper-select lever in the tractor paper position. Open the printer cover, adjust the gap adjust lever base on the paper type.

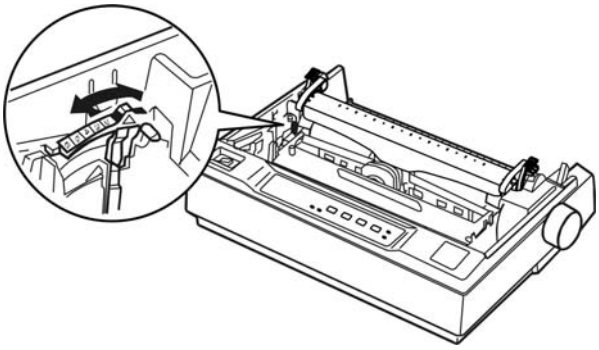


Figure 3-6 Adjust gap adjust lever

2. Make sure the tractor is installed correctly (refer to chapter 1).
3. Release the sprocket units by pulling the sprocket locks upwards.

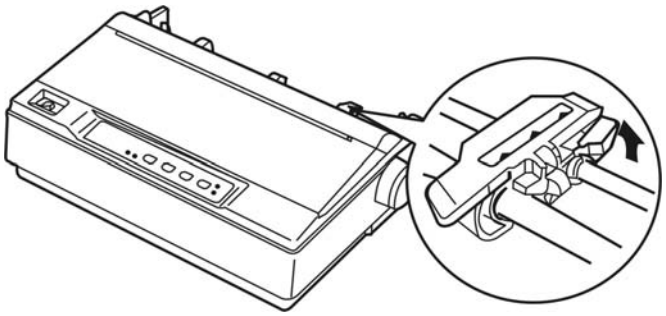


Figure 3-7 Release the sprocket

4. Slide the left sprocket unit using the scale on the printer as a guide. The printer prints to the right of the position marked 0. Push the sprocket lock lever back to lock it in place. Then slide the right sprocket unit to match the width of your paper, but do not lock it. Move the paper support so it is midway between the sprocket units.

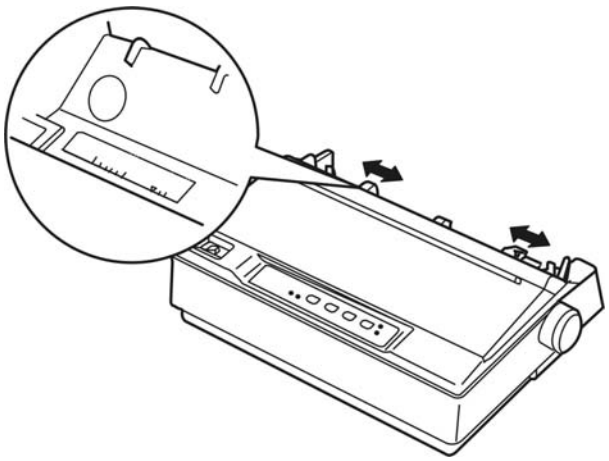


Figure 3-8 Adjust the position of the sprockets

5. Make sure your paper has a clean, straight leading edge. Open the sprocket covers. Fit the first holes of the paper over the sprocket pins and then close the sprocket covers. Slide the right

sprocket unit to remove any slack in the paper and lock it in place. Now the paper is in the ready position.

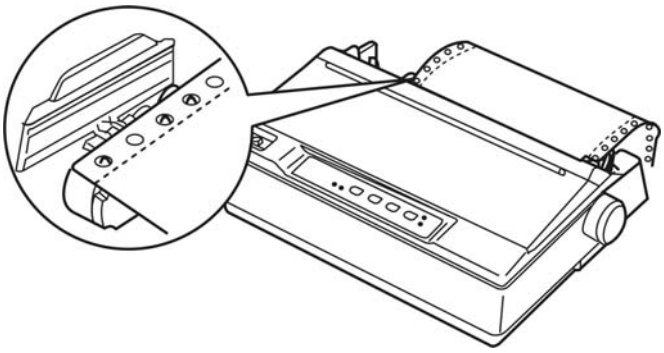


Figure 3-9 Load the continuous paper in the tractor

Caution: Only paper jams are cleared when the printer is turned off, can use the knob on the right side of the printer. Otherwise, you may damage the printer or change the top-of-form position.

6. Hold the paper guide horizontally and install it according to the follow figure, then block it in the direction shown by the arrow.

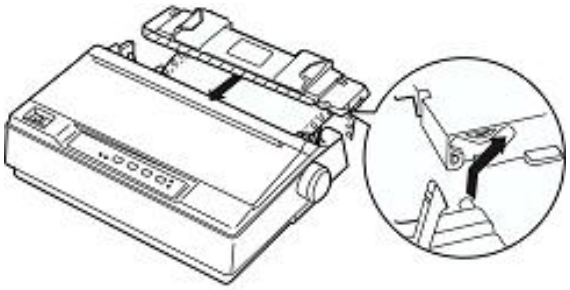


Figure 3-10 Install paper guide

7. Slide the left and right edge guide to the center until they stops at the triangle shaped guide mark.

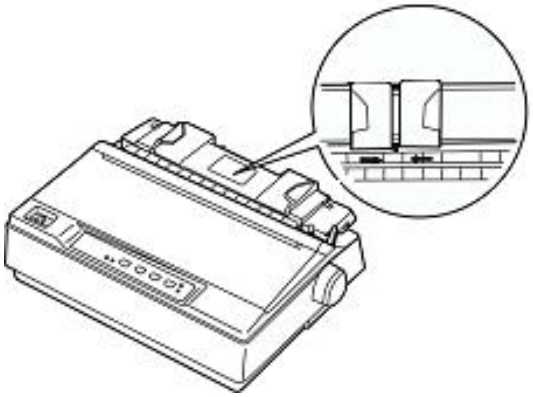


Figure 3-11 Adjust the position of paper guide

8. Make sure the printer cover is closed. Turn on the printer, and press **LOAD/EJECT** to feed paper. You can adjust the printing home position of the page laypout according to Micro adjust of top of form position and tear off position. When the printer receives data, it begins printing automatically.

Note: Do not use the knob to adjust the paper-in position due to the micro-range is limited. When the adjustment exceeds the up-limit or down-limit, the beeper beeps and the

position can not be adjusted for a further time. The position is in effect before next adjustment. (The margin set in the software can cover this adjustment, so you had better adjust the printing home position with the software.)

9. When you finish printing (the printer receives no data for several seconds) the printer feeds the perforation of the tractor paper to the edge of the printer cover so that you can tear off the last sheet.

Note: Set the auto tear off function in the Print Setting mode on. Otherwise, the printer does not feed the perforation to the edge of the printer cover automatically.

10. If the perforation and the edge of the printer cover do not match, you should adjust the paper position following the steps in “Micro adjust” and tear down the paper having been printed.

    When you send print data again, the paper automatically feeds back to the printing home position and ready to print.

How to switch tractor paper to cut-sheet paper

Firstly, tear down the tractor paper having been printed, then hold **LOAD/EJECT** button to eject the paper in the offline mode. Pull the paper-selected lever to the cut-sheet position, and load the cut-sheet according to chapter 3.1.1.

Caution: Make sure tractor paper having been printed is teared off before ejecting the printer, as too many pages ejected can cause paper jammed.

Printing in the pull tractor position

1. Turn the printer off; then remove the paper guide. Pull the paper-select lever forward to the tractor paper position. Remove the printer cover and tear part and adjust the gap adjust lever according to the paper type.
2. Make sure the tractor installed correctly (refer to chapter 1).
3. Release the sprocket units by pulling the sprocket locks upward shown as figure 3-12.

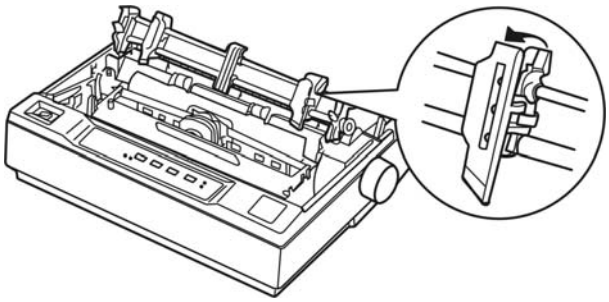


Figure 3-12 Release the sprocket units

4. Insert the paper (the printing side is faced down) into the paper slot as shown below and pull it up. Position the paper using the scale on the printer as a guide. The printer prints to the right of the position marked 0.

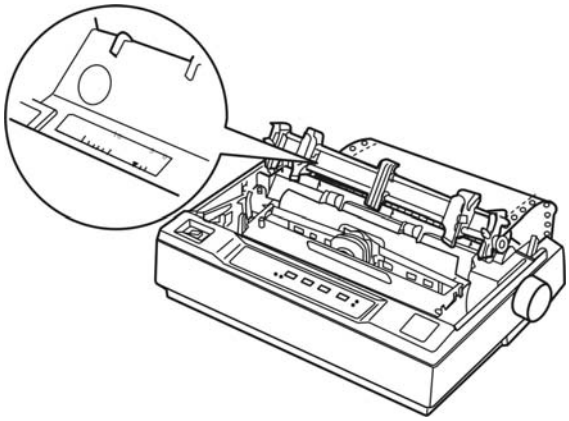


Figure 3-13 Insert the tractor paper into the paper slot

5. Slide the left sprocket unit so that its sprockets match the position of the holes in the paper and lock the unit in place. Then slide the right sprocket unit to match the width of your paper, but do not lock it. Move the paper support midway between the two sprocket units.

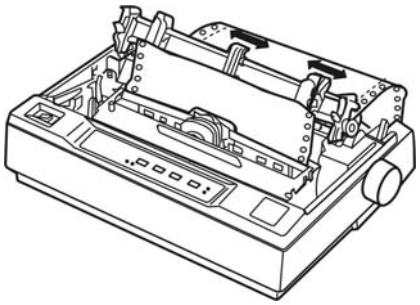


Figure 3-14 Adjust the position of the sprocket

6. Make sure your paper has a clean, straight leading edge. Open the sprocket covers. Fit the first holes of the paper over the sprocket pins and then close the sprocket covers. Slide the right sprocket unit to remove any slack in the paper and lock it in place.

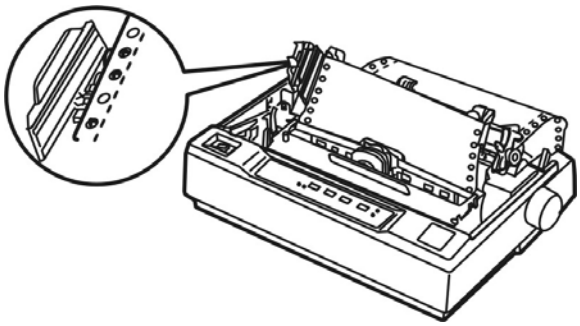


Figure 3-15 Load paper in the pull tractor

7. To separate the incoming paper from the printed paper, attach the paper guide. Hold it horizontally and fit its notches over the printer's mounting posts. Then slide the paper guide toward the back of the printer until you feel it click.
8. Slide the left and edge guides to the center until it stops at the triangle shaped guide mark.
9. Make sure the printer cover is closed. Then turn on the printer. When the printer receives data, it begins printing automatically.

When using push tractor and pull tractor at the same time

1. Turn the printer off; then remove the paper guide. Pull the paper-select lever forward to the

tractor paper position. Remove the printer cover, adjust the gap adjust lever according to the paper type.

2. Make sure the tractor installed correctly (refer to chapter 1).

3. Load the tractor paper on the sprocket of the push tractor refering to “Printing in the push tractor position”.

4. Turn on the printer, press **LOAD/EJECT** button to load the paper automaticly and the print head is at the printing home position of the first page. Adjust the printing home position of page layout if necessary. Hold **LF/FF** button, the printer feeds one page automatically.

5. Release the sprocket lock of the pull tractor and open the sprocket cover. Pull straight the paper upwards, adjust the left and right sprockets unit they match the width of your paper. Then clip the perforation of the paper into the sprockets of the pull tractor, lock the prockets at last. The paper should be without twisted.

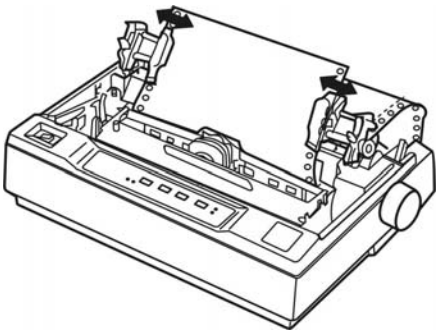


Figure 3-16 Adjust the position of the pull tractor

6. If the perforation of the paper is not match with the sprocket of the pull tractor when tightening the paper lengthways, then you can do as follows:

   1) Pull the paper select lever backward to the cut-sheet position.

   2) Turn the paper feed knob until the paper is tightened lengthways.

   3) Pull the paper select lever forward to the tractor paper position.

7. Reinstall the paper guide and printer cover again.

8. The printer begins printing automatically when receiving print commands.

3.1.3 Multi-part Forms

You can use the built-in tractor to print on carbonless multi-part forms of up to four parts (one original plus three copies). Before you print on the forms, set the gap adjust lever as described in the previous section. These tips will help you get good results:

1. Lift up the paper guide as figure 3-17 shown, or it may lead to paper jam when printing.
2. Never load multi-part forms joined by metal staples, tape, or continuous gluing.
3. Make sure the print contents are all within the printable area when printing multi-part forms, or it may damage the print head. (See the printable area in Appendix)

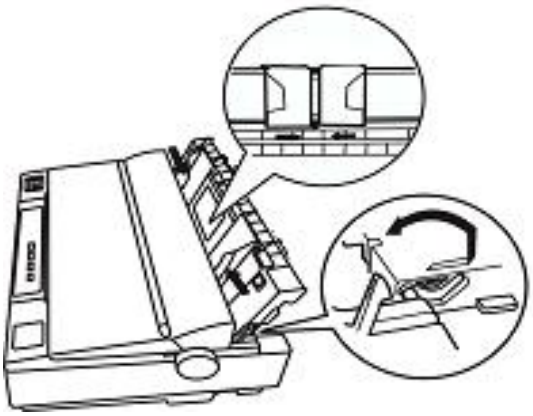


Figure 3-17 Raise paper guide

3.1.4 Labels

You must use the tractor as a pull tractor to print on labels. Keep these tips in mind:

1. You load labels the same way you load tractor paper, except that thegap adjust lever should be set to 1.
3. Because labels are especially sensitive to temperature and humidity, use them only under normal operating conditions.
4. Make sure the printing stays entirely within the printable area. (See the Appendix for specifications.)
5. Do not leave labels loaded in the printer between jobs; they curl around the platen and may jam when you resume printing.
6. Remove the labels from the printer, tear off the fresh supply at the rear of the printer; then press **LF/FF** to advance the remaining labels out of the printer.

Caution: Never feed labels backward through the printer; they can easily peel off the backing and jam the printer. If a label does become stuck in the printer, contact your dealer.

3.1.5 Envelopes

The way of installing envelopes is the same of cut-sheet. Keep the following tips in mind.

1. Before loading an envelope, set the gap adjust lever to position 4 or 5.
2. To load an envelope, push it firmly and hold it until it feeds into the printer.

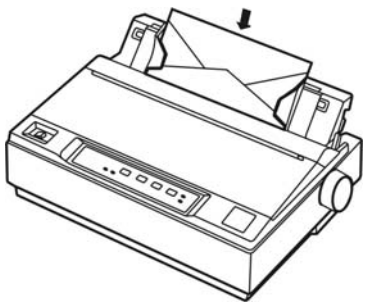


Figure 3-18 Insert the envelop into the paper guide

3. Use envelopes only under normal temperature and humidity conditions.
4. Make sure the printing stays entirely within the printable area. The print head must not go past the left or right edge of the envelope or other thick paper. (See the Appendix for specifications.) It's a good idea to print a test sample using a normal single sheet of paper before you print on the envelopes.

3.2 Using the Printer Setting Mode

3.2.1 To Print the Current Settings

1. Press the **ONLINE** button on the control panel as well as turn on the printer. The print head returns with the printer beeping once. If the **ONLINE** indicator is off and the **power** indicator blinks, it can be indicated that there is paper out.
2. Set the paper select lever to the proper position.
3. When you use cut-sheet paper, after load the cut-sheet in the paper guide, it will print out the current setting and facility operation guide on control panel immediately. When you use the tractor paper, once you press **LOAD/EJECT** button, the printer starts printing the current setting and facility operation guide on control panel.

DP321

Current Setting Report

VX.X-XXX XXXX/XX/XX

SYSTEM SETUP

LANGUAGE	ENGLISH	CHINESE					
EMULATION	EPSON	IBM					
CHAR. MODE	ASCII	CHINA					

CHARACTER

FONT	ROMAN	SANS SER					
ENG PITCH	10 CPI	12 CPI	15 CPI	PROPORTIONAL			
CHI PITCH	6.7 CPI	7.5 CPI					
INTL CHAR SET	U. S. A.	FRANCE	GERMANY	U. K.	DENMARK1	SWEDEN	ITALY
	SPAIN 1	JAPAN	NORWAY	DENMARK2	SPAIN 2	LATIN AM	KOREA
	LEGAL	HOLAND	TURKEY				
CHARACTER SET	ITALICS	GRAPHICS					
IBM CHAR TBL	SET 1	SET 2					
CODE PAGE	U. S. A.	MULTI	PORTUGAL	CANADA	NORWAY	ICELAND	BRASCII
	ABICOMP	ROMAN 8	ISO LTN1	PC858	ISO LTN9	ARAB NLS	WIN 1256
	TURKEY	WIN LAT1	CYRILLIC	RUSSIAN	THAI	VIETNAM	

PAGE LAYOUT

LINE SPACING	6 LPI	8 LPI					
FORM LENGTH	3 INCH	3.5 INCH	11/3 INCH	4 INCH	5 INCH	5.5 INCH	6 INCH
	7 INCH	8.5 INCH	LETTER	A4	12 INCH		
FORM LOCK	OFF	ON					
PAGE SKIP	OFF	ON					
COMPRESS PRINT	NORMAL	75%	50%				

PRINT SETUP

PRINT DIR	BI-DIR	UNI-DIR	AUTO	
PRT-SPEED	NOR-SPEED	HI-SPEED	SUP-SPEED	
AUTO LF	OFF	ON		
TEAR OFF	OFF	ON		
TEAR POS	TEARER	HEAD TOP		
PIN SWITCH	OFF	ON		

SERIAL 1/F

BAUD RATE	19200 BPS	9600 BPS	4800 BPS	2400 BPS	1200 BPS
PARITY	NONE	ODD	EVEN		
DATA BIT	8 BIT	7 BIT			
STOP BIT	1 BIT	2 BIT			
PROTOCOL	XON/XOFF	DTR			

Please press the **ONLINE** key, ensure the online light is on, then hold down the **EJECT/LOAD** key about 3 seconds to enter SETUP MENU SYSTEM.

Figure 3-19 Print out the current menu setting

Note: The currect settings are underlined.
When you select compress printing in the setup menu, high speed printing is invalid.

■ **Input the setup menu system**

1. The printer is in online mode (**ONLINE** light is on). Holding the **LOAD/EJECT** key for 3 seconds.

- The power light and online light blink twice at the same time to indicate enter into the setup menu mode.
- Firstly, the printer prints out the title and main menu, as shown below. The underlined items are the default settings. The print head stays under the default settings.

DP321

SETUP MENU SYSTEM

Use the **LOAD/EJECT** key to point the print head to the desired setting.
Use the **LF/FF** key to confirm the current setting
Use the **ONLINE** key to go back the previous menu (Press and hold the **ONLINE** key to go back the main menu).
Press and hold the **TEAR** key to save settings and exit.

Current settings are UNDERLINE New settings will be **boldfaced**.

MAIN MENU CHARACTER PAGE LAYOUT PRINT SETUP SERIAL I/F
HEAD PIN

Figure 3-20 Setup menu system

2. Use the **LOAD/EJECT** key to point the print head to the desired setting.

   Use the **LF/FF** key to enter submenu or confirm the current setting

   Note: The newly settings are shown in boldfaced.

   Use the **ONLINE** key to go back the previous menu (Press and hold the **ONLINE** key to go back the main menu).

   Press and hold the **TEAR** key to save settings and exit.

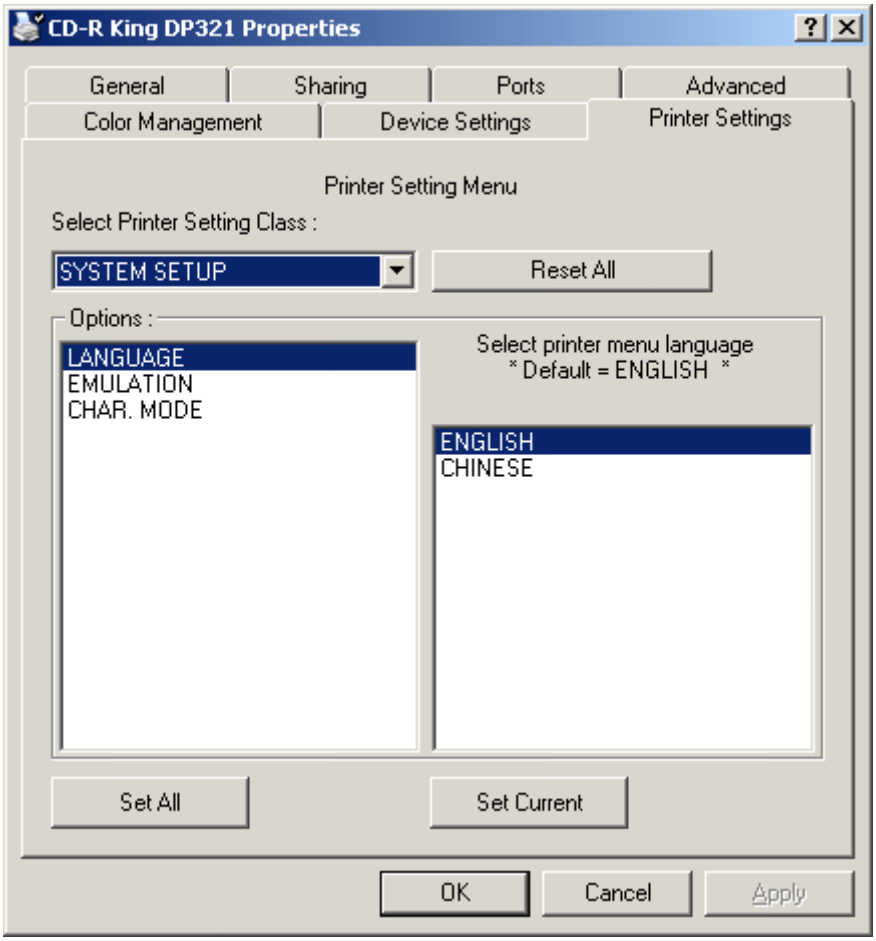
3. After finish setting, turn off the printer directly to give up the modified setting; or press the **TEAR** down to save the setting and exit the setup menu setting.
4. Turn off the printer, and turn on again.

3.2.2 Online-aptitude Parameter Settings

DP321 supports the function of online-aptitude parameter settings, which can be set in the PC with the driver installed in.

The concrete setting steps are shown as follows:

1. Make sure that the host and the printer are connected with a cable and both the host and the printer is turned on, the printer should be online as well.
2. Click “Start” → “Settings” → “Printers”.
3. Right click “CD-R King DP321” in the “Printers”, select “Properties”.
4. Click “Device Property” in the property page.



5. The setting way is corresponding with that of printer menu system. In the “Printer Settings” layout, select the first class menu in the combobox of “Select Printer Setting Class”, select the second menu in the “Configuration” and set the item in the current parameters list.
6. Click the button “Reset All” to reset all the parameters to be the driver’s default, but not change the printer’s settings.
7. When setting the parameters: you can click “Set Item” to save the current settings after setting each item, or you can also click “Set All Items” after setting all parameters. After clicking “Set All Item” or “Set Item”, the parameter’s instruction will be sent to the printer.
8. The printer’s parameter settings are changed at once after receiving the instruction and the printer does not need to restart.
9. After finishing settings, click “OK”, exit the “Properties” window.

3.3 Explaining Menu Terms

1. LANGUAGE

Choose the language set menu, menu content according to setting of the language style to print.

2. EMULATION

Select EPSON ESC/PK2 or IBM 2391 emulation.

3. CHAR. MODE

Select the ASCII or Chinese character mode.

4. FONT

Set the font for the printer to use in the absence of any font control instructions from your software.

5. ENG PITCH

Set the pitch to determine the horizontal spacing of the printed English.

6. CHI PITCH

Set the pitch to determine the horizontal spacing of the printed Chinese.

7. INTL CHAR SET

Select international character.

8. CHARACTER SET

Select character set into Italic Character Table or Graphic Character Table.

9. IBM CHAR TBL

Select SET 1 or SET 2 character table.

10. CODE PAGE

Select a code page.

11. LINE SPACING

Set the vertical spacing of the printed characters. You can set it to either 6 LPI (the default setting) or 8 LPI.

12. FORM LENGTH

You can set the page length to 3, 3.5, 11/3, 4, 5, 5.5, 6, 7, 8.5, 11, 12, or 70/6 (the length of A4 paper) inches.

13. FORM LOCK

Pages long setup instructions invalid.

14. PAGE SKIP

When this function is set valid, the printer will leap over the page skip during printing, it will leave a one inch margin in the bottom of the current page and the top of the next page. Most of the software will set the margin at the top and bottom of the page itself, so you just use this function when the software doesn't offer this margin. This function is unvalid for cut-sheets.

15. COMPRESS PRINT

Select compressed print mode or normal print mode.

16. PRINT DIR

Print direction mode contains one-way、bidirectional and automatic mode. When default option is automatic mode, print direction is bidirectional. Only choosing "automatic mode", print direction instruction is in effect. If choosing "one-way" or "bidirectional" mode, print direction instruction is invalid.

17. PRT-SPEED

Select mimeograph speed.

18. AUTO LF

When this function is on, each carriage will advance one line of the page. If you don't want your fonts with double spacing, select this function "OFF"; if the printed content are superposed, you should turn this function on.

19. TEAR OFF

When you use the push tractor, the printer can deed the tractor paper to tear off position with this function, it is easier for users to tear off the printed page. When you use the pull tractor,

please turn off this function.

20. TEAR POS

Users can select the tear off position according to the requirement.

21. PIN SWITCH

Select pins switch mode. The printer auto switches the different pin to print table line.

22. BAUD RATE, PARITY, DATA BIT, STOP BIT, PROTOCOL

All these items are valid when using serial interface. The settings of printer and computer should be the same.

3.4 Restore the Default Settings

1. Hold on **TEAR**, **LOAD/EJECT** and **LF/FF** keys on the control panel at the same time, and then turn on the printer. The LEDs of the **PAPER OUT** and **ONLINE** on the control panel blink 3 times respectively at the same time and the printer makes two beeps to confirm that the printer's factory settings have been restored.
2. Lossen the keys and switch the printer off and on again.
3. After these steps, the printer's factory settings work.

Chapter 4 Problems and Solutions

4.1 Problems and Solutions

Most problems you may encounter while operating your printer have simple solutions.

You can check the operation of your printer using the self test. See “Running the Self Test” on page 1.6. If the self test works properly, the problem probably lies in the computer, the software, or the interface cable. If the self test does not work, contact your dealer or qualified service person for assistance.

Note: Press LOAD/EJECT button and turn on the printer, the printer will run the Chinese self-test.

Press TEAR button and turn on the printer, the printer will run the English self-test.

If you are an experienced user or a programmer, you can print a hexadecimal dump to isolate communication problems between the printer and computer. To print a hex dump, turn off the printer. Install the paper properly, next, hold down the LF/FF and TEAR buttons while you turn on the printer. Then send data from your computer. The printer prints all the codes it receives in hexadecimal format.

4.2 Power Supply

Power is not being supplied normally.

Phenomenon 1: The lights on the control panel do not go on and the printer does not work.

Solutions:

1. Check that the power cord is properly plugged into the electrical outlet.
2. If the electrical outlet is controlled by an outside switch or automatic timer, use another outlet.
3. Plug another electrical device, such as a lamp, into the outlet to determine whether the outlet is operating properly.

Phenomenon 2: The lights come on briefly and then go off. The lights stay off even when the power is turned on again.

Solutions: Check whether the printer’s rating volage is matched with the power cord. If not, unplug the power cord immediately and contact your dealer or a specified CD-R King service center for advice. Do not plug the power cord to the electrical outlet again.

4.3 Printing

The printer does not print.

Phenomenon 1: The Online light is on but nothing is printed.

Solutions:

1. Check that the Driver is installed properly for your printer, as described on “Installing the Printer Driver”. Check the driver’s printer settings.
2. Check both ends of the interface cable. Make sure the cable meets both the printer and computer specifications.

Phenomenon 2: The Online light is off and the power light blinks, the printer beeps once.

Solutions: The printer may be out of paper. Load paper in the printer.

Phenomenon 3: The printer sounds like it is printing, but nothing is printed.

Solutions:

1. The ribbon cartridge may not be installed properly. See “Installing the ribbon cartridge”.
2. The ribbon may be worn out. Replace the ribbon.
3. Check whether the gap adjust lever is too high, if so, please set the gap adjust lever to the corresponding position according to the paper thickness.

Phenomenon 4: The printer makes a strange noise.
Solutions:

1. Turn off the printer and check for a paper jam, a ribbon jam, or other problems.

Phenomenon 5: The beeper sounds several times and the ONLINE indicator is off.

Solutions:

1. Switch off the printer and power on again.
2. If the **ONLINE** lindicator stays off, check for a paper jam or ribbon jam. If it does, turn the printer off and clear the jam.
3. If an error occurs when you switch between cut sheets and tractor paper, make sure the paper select lever is in the correct position.
4. If the printer still does not work correctly, turn off the printer and contact your dealer or a specified CD-R King service center.

● The print is faint or uneven

Phenomenon 1: Printed characters have parts missing at the top or bottom.

Solutions: The ribbon cartridge may not be installed properly. See section 1.5.2.

Phenomenon 2: The printout is faint.

Solutions: The ribbon may be worn out. Replace the ribbon.

● The ribbon can not move smoothly.

Solutions: The ribbon may be worn out. Replace the ribbon.

● Dots are missing in printed characters or graphics

Phenomenon 1: A line of dots is missing in the printout.

Solutions: The print head may be damaged. Stop printing and contact your dealer or a specified CD-R King service center. To have the print head replaced.

Phenomenon 2: Dots are missing in random positions.

Solutions: The ribbon may be damaged. Replace a new one.

● Printed characters are not what you expected

Phenomenon 1: The fonts or characters you sent with your software did not print.

Solutions: Check whether the driver is correctly configured for your printer. For instructions, see “Installing the printer driver”.

Phenomenon 2: The font selected on the control panel can not be printed.

Solutions: Your software may be overriding your control panel setting. Use the font setting in your software program.

● The print position is not what you expected

Phenomenon 1: The original print position is not correct or the bottom part of one page is printed at the top of the next page.

Solutions:

1. It is also possible to adjust the loading position using the **LF/FF** button in the micro adjust mode. To use micro adjust, see “Micro-Adjust”.
2. Check the page length set by your software and adjust it in the sofeware or in the printer to match the paper length.

Phenomenon 2: Regular gaps occur in the printout.

Solutions: Skip-over-perforation may be on. Set skip-over-perforation to off in the printer setting mode. See “Changing the printer settings”.

4.4 Paper Handling

● Cut-sheets do not be fed properly

Phenomenon 1: Paper does not feed.

Solutions:

1. Tractor paper may be left in the printer. Remove the tractor paper. Set the paper-select lever to the cut-sheet position. Insert a new sheet.
2. May be the sensor can not check there is paper if there is no tractor paper in the printer and the paper-select lever is in the proper position. Try to move the paper a little left to make sure to touch the paper feed sensor.

Phenomenon 2: Paper feeding is crooked or the paper jamed.

Solutions: Turn off the printer and pull out the jamed paper. Reinsert a piece of cut-sheet straight into the paper guide, and adjust the paper guide to match with paper width. Make sure that the printer cover is closed, and power on again.

Phenomenon 3: Paper does not eject completely.

Solutions:

1. Use the **LF/FF** button to eject the page.
2. Make sure the printer cover is closed.
3. The paper may be too long. Check whether the paper used meets the specifications specified in the Appendix, and the using paper must be within the specified range. See the paper specifications in the Appendix.

● Tractor paper does not feed properly

Phenomenon 1: The tractor does not feed the paper.

Solutions:

1. Check that the paper-select lever is pulled forward to the tractor paper position. If not, move the lever to the correct position.
2. If this problem still can not be sloved. The cause may be that the paper has come off the tractor. Reattach the paper to the tractor.

Phenomenon 2: Paper feeding is crooked or the paper jamed.

Solutions:

1. Make sure the paper guide is in the upright position.
2. Make sure the position of your paper supply can not prevent it from feeding vertically.
3. Make sure your paper supply is positioned within 1 meter (3 feet) off the printer.
4. Make sure the printer cover is closed.
5. Make sure the edge guide positions are correct. Position the edge guides at the triangle guide marks.

6. Check that the holes on the both sides of the paper are aligned with each other. Also, make sure the sprocket units are locked and their covers are closed.
7. Check whether the paper specifications meet the standard request according to the Appendix A.

Phenomenon 3: The paper does not eject completely.

Solutions:

1. May be the page length is too long. When using the pull tractor, tear off the paper having entered the printer, then press the **LF/FF** button to feed the paper forward. When using the push tractor, tear off the last printed paper, then press the **LOAD/EJECT** button to feed the paper backward.
2. Please make sure the paper length is within prescribed range. (Refer to the paper specifications in Appendix A)

Phenomenon 4: When you switch between cut sheets and tractor paper, the beeper sounds several times and the online indicator is off.

Solutions: There is paper left in the paper in channel while you change the paper select lever position. Return the paper select lever to the previous position and eject the paper. Then change the paper select lever position again.

4.5 Alignment Adjust Mode

Enter the alignment adjust mode to improve the print quality when the printer is used for a long time.

Note: When the gap adjust lever is in the position of 2 or above, the printer is in copy mode automatically. Users can set the gap adjust lever according to specific paper type, then adjust the alignment following the steps below:

1. Turn on the printer, make sure the printer is paper in then turn off the printer.
2. The way to enter alignment adjustment mode:

   In online mode, press down the **LF/FF** and **TEAR** buttons at the same time until the power light and online light blink simultaneously, the printer enters the alignment adjustment mode (the copy and not-copy alignment modes are adjusted dividually). Then the printer prints out the current alignment states.
3. After entering the alignment adjust mode, press the following keys to adjust the degree of alignment:

EJECT/LOAD	Each press this key, the even line will move left with one step (the maximum is 30 steps)
LF/FF	Each press this key, the even line will move right with one step (the maximum is 30 steps)
TEAR	Switch to the next DPI adjust state
ONLINE	Store the current settings (The power light and online light blink several times simultaneously.

4. Restart the printer and exit the alignment adjust mode.

Note: Alignment adjust mode will affect the printing quality, think over before adjust it and strict to the instructions while adjusting.

Chapter 5 Printer Maintentance

5.1 Printer Cleaning

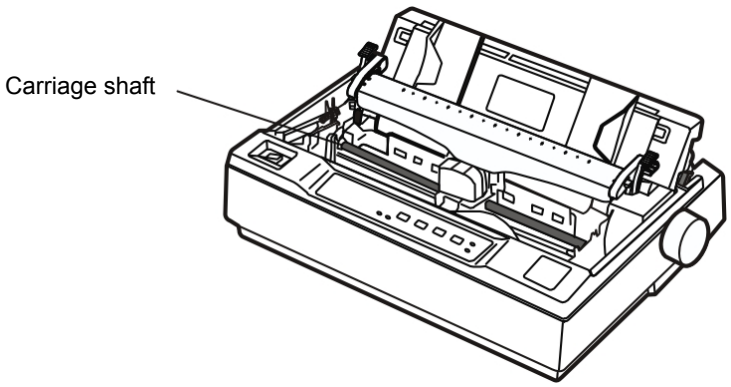


Figure 5-1 Printer cleaning

Periodical cleaning and cleaning tool

Periodical cleaning: every 6 months or 300 working hours

Cleaning tool: Dry cloth (Use soft cloth while cleaning metal parts)

Cleaning carriage shaft

There is a layer of oil covered on the carriage shaft which guarantees the carriage runs smoothly. But the oil is easy to absorb dust, please clean the dust with soft cloth first, and then add proper lube (NYE180 lube of NYE Company is recommended), move print head back and forth to make lube scattered.

Cleaning the form feed path

Wipe off wastepaper, clean dirt and dust.

Note: 1. Turn off printer and pull out the power cord before cleaning.

2. Being used under dust circumstance, the carriage shaft may stack much dust and affect the print quality.

3. If you have just finished using the printer, let the print head cool for a few minutes before you touch it.

4. Please use a soft cloth for cleaning, do not use combustible solvent.

Appendix A Specifications

A.1 General

<table>
<tr><th>Item</th><th colspan="5">Description</th></tr>
<tr><td>Type</td><td colspan="5">9 Pin Dot Matrix Impact Printer</td></tr>
<tr><td>Print direction</td><td colspan="5">Uni-directional or bidirectional logic seeking</td></tr>
<tr><td>Number of columns</td><td colspan="5">80 columns (10 CPI)/ 203.2 mm</td></tr>
<tr><td rowspan="6">Print speed</td><td rowspan="3">ASCII</td><td></td><td>Normal peed
(NLQ)</td><td>High speed
(DRAFT)</td><td>Super high speed
(SUPER-DRAFT)</td></tr>
<tr><td>10 CPI</td><td>56 CPS</td><td>225 CPS</td><td>300 CPS</td></tr>
<tr><td>12 CPI</td><td>67 CPS</td><td>270 CPS</td><td>337 CPS</td></tr>
<tr><td rowspan="3">Chinese</td><td></td><td>Normal speed</td><td colspan="2">High speed</td></tr>
<tr><td>6.7 CPI</td><td>37 CPS</td><td colspan="2">75 CPS</td></tr>
<tr><td>7.5 CPI</td><td>42 CPS</td><td colspan="2">84 CPS</td></tr>
<tr><td rowspan="2">Print head</td><td colspan="5">Diameter of wire: 0.3 mm</td></tr>
<tr><td colspan="5">Life: 400 million dots/wire</td></tr>
<tr><td>Resolution</td><td colspan="5">240 x 144 dpi (Max.)</td></tr>
<tr><td rowspan="2">Character set</td><td colspan="5">ASCII: 17 international character sets (U.S.A, FRANCE, GERMANY, U.K., DENMARK1, SWEDEN, ITALY, SPAIN 1, JAPAN, NORWAY, DENMARK2, SPAIN 2, LATIN AM, KOREA, LEGAL, HOLAND, TURKEY)</td></tr>
<tr><td colspan="5">Chinese: GB 18030</td></tr>
<tr><td>Code</td><td colspan="5">20 variety: U.S.A, MULTI, PORTUGAL, CANADA, NORWAY, ICELAND, BRASCII, ABICOMP, ROMAN 8, IS0 LTN1, PC858, ISO LTN9, ARAB NLS, WIN 1256, TURKEY, WIN LAT1, CYRILLIC, RUSSIAN, THAI, VIETNAM</td></tr>
<tr><td rowspan="2">Fonts</td><td colspan="5">ASCII: DRAFT, ROMAN, SANS SER</td></tr>
<tr><td colspan="5">Chinese: GB 18030 song ti</td></tr>
<tr><td>Bar code</td><td colspan="5">EAN-13, EAN-8, Interleaved 2 of 5, Matrix 2 of 5, Industrial 2 of 5, Code 39, Code 128 B, Code 128 C, NW-7</td></tr>
<tr><td rowspan="2">Character pitch</td><td colspan="5">ASCII: 10 CPI, 12 CPI, 15 CPI, proportional</td></tr>
<tr><td colspan="5">Chinese: 6.7 CPI, 7.5 CPI</td></tr>
<tr><td>Line space</td><td colspan="5">1/6 inch, programmable in 1/432 inch increments</td></tr>
<tr><td rowspan="2">Paper feed Speed</td><td colspan="5">Normal mode: 3 inches per second (Continuous feed)
63ms formfeed one line (1/6 inch)</td></tr>
<tr><td colspan="5">Copy mode: 3 inches per second (Continuous feed)
63ms formfeed one line (1/6 inch)</td></tr>
<tr><td>Emulation</td><td colspan="5">EPSON ESC/PK, IBM 2391</td></tr>
<tr><td>Interface</td><td colspan="5">Parallel interface: Centronics (IEEE1284 NIBBLE Mode)
USB interface: USB 2.0 Full-Speed
Serial interface: RS-232C
★ According to specific interface standards</td></tr>
<tr><td>Input Buffer</td><td colspan="5">132 KB</td></tr>
<tr><td rowspan="2">Ribbon</td><td colspan="5">Model: JMR108 (or EPSON LX-300+II—#8750)</td></tr>
<tr><td colspan="5">Life: 3 million characters (draft mode)</td></tr>
<tr><td>Noise</td><td colspan="5">＜53 dB (A) (ISO7779 standard)</td></tr>
<tr><td>Control panel</td><td colspan="5">The control panel consists of four keys and four LED indicators.</td></tr>
</table>

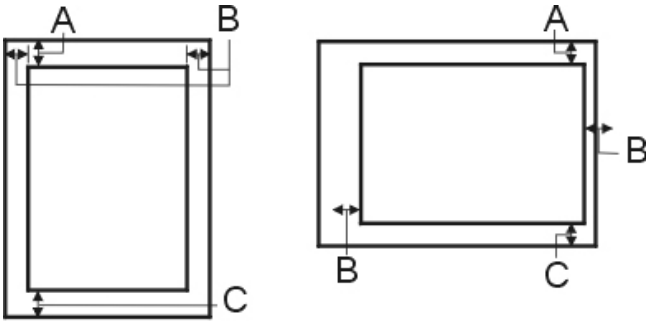
Paper feed type	Cut sheet: Feed paper by friction
	Tractor paper: Feed paper by drive tractor Feed paper by draught tractor
Paper specification	Cut sheet (Feed by tractor): Width: 148 ～ 257 mm Thickness: 0.065 ～ 0.14 mm Weight: 52 ～ 90 g/m^2
	Tractor paper (Feed from rear to front): Width: 101.6 ～ 254 mm Total Thickness: 0.065 ～ 0.39 mm Weight: Single paper 52 ～ 82 g/m^2 Multiple paper Every page 40 ～ 58 g/m^2
	Not dry gum label (Feed from rear to front): Width: Mount 101.6 ～ 254 mm Least label 63.5 × 23.8 mm Thickness: mount 0.07 ～ 0.09 mm Total thickness: 0.16 ～ 0.19 mm Weight: 68 g/m^2
	Envelope (Feed by tractor) : Dimension: NO.6: 166 mm × 92 mm NO.10: 240 mm × 104 mm Thickness: 0.16 ～ 0.52 mm Weight: 45 ～ 91 g/m^2
Max paper thickness	0.39 mm
Copy	Original + 3 copes
Physical dimensions	366 (Width) × 275 (Depth) × 156 (Height) mm
Weight	Approx. 4.3 Kg
Environmental conditions	Operating environment: Temperature: 5 ～ 35 ℃ Humidity: 40%RH ～ 80 %RH
	Storage environment: Temperature: -40 ～ 55℃ Humidity: ≤93 (40℃)
Power requirements	Rated voltage: 220V
	Rated frequency range: 50Hz
Power consumption	①Operation: 47 W; ②Max: 130 W; ③Standby: 4.3 W. Note: Only when the produce doesn't connect power supply, could consume zero energy.
Reliability	MTBF≥10,000 hours (IEC 605.7standard)
Safety marks	GB 4943
EMI	B class

A.2 Printable Area

Note: 1. To assure the print quality, please make sure the print contents are within the printable area.

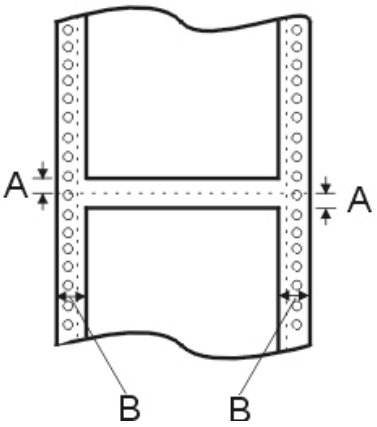
2. If the print contents exceed the printable area, the print head may be damaged.

A.2.1 Cut Sheets and Envelopes



A: The minimum top margin ≥ 8.0 mm.
B: The minimum right/left margin is 3.0 mm.
However, the maximum printable width is 203.2 mm.
C: The minimum bottom margin ≥ 9.0 mm.

A.2.2 Tractor Paper



A: The minimum top and bottom margin above and below the perforation are≥ 8.0 mm.
B: The minimum left and right margins are≥ 3.0 mm.
The maximum printable width is 203.2 mm (8.0 inches).

A.3 Interface Specifications

Your printer is equipped with a parallel interface, a USB interface and a serial interface (According to specific interface standards). The printer switches automatically to the appropriate interface when it receives data.

A.3.1 Parallel Interface

The parallel interface has the following characteristics.

Data format: 8-bit
Synchronization: **/**STROBE pulse
Handshaking: BUSY and /ACKNLG signals
Signal level: TTL compatible

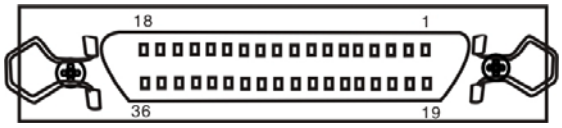


Figure A-1 Parallel interface connector pin numbers

A.3.2 USB Interface

The following table provides the standardized contact terminating assignments by number and color for Series “A” and Series “B” connectors of Full-speed USB 2.0.

Contact Number	Signal Name	Color
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black

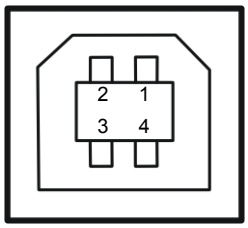


Figure A-2 USB-B type connector

A.3.3 Serial Interface

The serial interface has the following characteristics.

Baudrate (bps): 1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps (selectable)
Data length: 7 or 8-bit (selectable)
Start bit: 1 bit
Parity bit: Odd, even, or none (selectable)
Stop bit: 1 bit
Handshaking: DTR protocol, XON/XOFF protocol (selectable)

Serial pin assignments

The following table lists the serial connector pin assignments and describes their respective interface signals.

Pin No.	Signal	Direction	Description
1	Protective Ground (FG)	—	Printer’s chassis ground
2	Transmitted Data (TXD/SD)	Out	Printer has transmitted serial data
3	Received Data (RXD/RD)	In	Printer has received serial data
7	Signal Ground (SG)	—	Return path for data control signals
20	Data Terminal Ready (DTR)	Out	Positive when the printer is ready to receive data, and negative when the printer is not ready

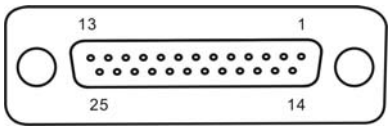


Figure A-3 Serial interface connector pin numbers

Appendix B Command Summary

This printer supports EPSON ESC/PK2 control commands shown as the follow table:

Classify	No	Command	Description
Printer Control Commands	1	ESC @	Initialize Printer
	2	CAN	Cancel Line
	3	DC1	Select Printer
	4	DC3	Deselect Printer
	5	DEL	Delete Character
	6	ESC #	Cancel MSB Control Sequence
	7	ESC >	Set MSB to 1
	8	ESC =	Reset MSB to 0
	9	BEL	Beeper
	10	BS	Backspace
	11	ESC U	Select Print Direction
	12	ESC <	Select character Unidirectional Mode (on one line)
	13	CR	Carriage Return
	14	LF	Line Feed
	15	FF	Form Feed
	16	ESC $	Set Absolute Horizontal print position
	17	ESC \	Set Relative Horizontal print position
	18	ESC (U	Define Unit
	19	ESC J	n/216” Line Feed
	20	HT	Horizontal Tab
	21	VT	Vertical Tab
Image and Color Handling	22	ESC *	Set Graphics Mode
	23	ESC K	8 dot Single-Density Graphics Mode
	24	ESC L	8 dot Double-Density Graphics Mode
	25	ESC Y	8 dot High-speed, Double-Density Graphics Mode
	26	ESC Z	8 dot Quadruple-Density Graphics Mode
Chinese Character Print Command	27	FS &	Set Chinese character mode
	28	FS .	Cancel Chinese character mode
	29	FS SO	Select Double Width Mode(Chinese)
	30	FS DC4	Cancel Double Width Mode(Chinese)
	31	FS W	Select/Cancel quadruple-size mode for Chinese character
	32	FS -	Select/Cancel Underline Mode for Chinese character
	33	FS S	Select full-size mode pitch for Chinese character
	34	FS T	Select half-size mode pitch for Chinese character

	35	FS U	Select half-size mode pitch adjustment for character
	36	FS V	Cancel half-size mode pitch adjustment for character
	37	FS x	Select /Cancel high speed printing
	38	FS SI	Select half-size mode for Chinese character
	39	FS DC2	Cancel half-size mode for Chinese character
	40	FS !	Select Chinese character print mode
	41	FS v	Select/Cancel form connect line
	42	FS k	Select Chinese font
	43	ESC I	Select Chinese CC-DOS print mode
ASCII Character	44	ESC k	Select Font Style
	45	ESC P	Select 10CPI Mode
	46	ESC M	Select 12CPI Mode
	47	ESC g	Select 15CPI Mode
	48	ESC p	Select/Cancel Proportional Mode
	49	ESC x	Select Print Quality
	50	ESC 4	Select Italic Mode
	51	ESC 5	Cancel Italic Mode
	52	ESC E	Select Emphasized Mode
	53	ESC F	Cancel Emphasized Mode
	54	ESC ! n	Select Print Mode
	55	ESC q n	Select Character Style
	56	ESC t n	Select Character Table
	57	ESC (t	Assign Character Table
	58	ESC R	Select International Character Set
	59	ESC &	Define Downloaded Characters
	60	ESC :	Copy ROM Characters Set into RAM
	61	ESC % n	Select/Deselect User-Defined Set
	62	ESC 6	Enable Character Set 2
	63	ESC 7	Cancel command ESC 6
Font Enhancement	64	SI	Select Compressed Mode
	65	DC2	Cancel Compressed Mode
	66	SO	Select Double Width Mode
	67	DC4	Cancel Double Width Mode
	68	ESC W n	Select/Cancel Double Width Mode
	69	ESC w n	Select/Cancel Double height Mode
	70	ESC G	Select Double Strike Mode
	71	ESC H	Cancel Double Strike Mode
	72	ESC - n	Select/Cancel Underline Mode
	73	ESC (-	Define and Apply a Style of Scoring

	74	ESC (^	Print Data as Characters
	75	ESC S n	Select Superscript/Subscript Mode
	76	ESC T	Cancel Superscript/Subscript Mode
Format Control	77	ESC C	Set Form Length in Lines
	78	ESC C NUL	Set Form Length in Inches
	79	ESC (C	Set Form Length in Defined Unit
	80	ESC (c	Define Form Format
	81	ESC N n	Select Skip-Over-Perforation
	82	ESC O	Cancel Skip-Over-Perforation
	83	ESC l	Set Left Margin
	84	ESC Q	Set right Margin
	85	ESC D	Set Horizontal Tab Positions
	86	ESC B	Set Vertical Tab Positions
	87	ESC 0	Select 1/8-inch Line Spacing
	88	ESC 2	Select 1/6-inch Line Spacing
	89	ESC 3	Select n/216-inch Line Spacing
	90	ESC A	Select n/72-inch Line Spacing
	91	ESC SP	Set Character Space

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